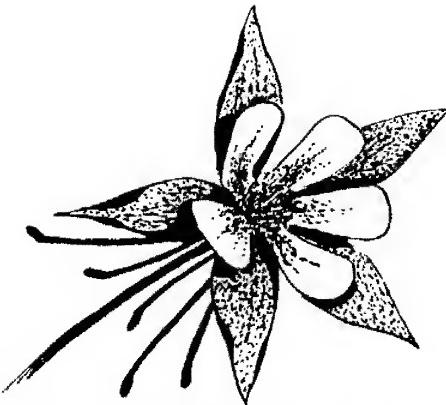


Aquilegia

Newsletter of the Colorado Native Plant Society



"... dedicated to the appreciation and conservation of the Colorado native flora"

Volume 12, Number 3

May/June 1988

Rare Plant Monograph Update

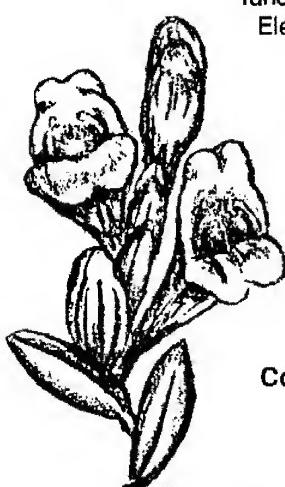
The cover art work for the "Rare Plant Monograph" and four other pieces, color renderings of *Braya humilis*, *Penstemon grahamii*, *Mimulus gemmiparus*, and *Eustoma grandiflorum*, have been completed by artist Carolyn Crawford. Three of these pieces were exhibited earlier this year in London and won the Royal Horticultural Society Grenfell Silver Medal. All five pieces will be on exhibit at the Spring Meeting on May 14, 1988. They will be auctioned after the publication of the Monograph.

As of February 1st, the Colorado Native Plant Society assumed the full responsibility for raising funds needed for the publication of the Monograph. Since our last report, a donation of \$3000 was received from the Denver Water Board. This makes a total of \$17,700 which has been raised. Many of our members have contributed to this project and we thank them for their support. We ask for your patience and continued support as we work to complete the Monograph.

If you would like to assist in any way with the fund-raising effort, please contact Eleanor Von Bargen (756-1400).

A contribution of \$25 or more entitles a CONPS member to a complimentary copy of the Monograph. If you would like to make a contribution, please send a check made out to CONPS (note "Rare Plant Monograph" on the check) to:

Colorado Native Plant Society
PO Box 200
Ft. Collins, CO 80522



Penstemon grahamii

Calendar Overview

Additional information about calendar items will be found throughout this issue.

May 28-30 Uncompahgre Plateau Trip

Leader: Elizabeth Neese

June 18-19 Roan Cliffs Field Trip

Leader: John Anderson

June 25 Pikes Peak Mistletoe Trip

Leader: Frank Hawksworth

July 16 Florissant/Photo Trip

Leaders: Mary Edwards, Bill Jennings

July 23-24 Hoosier Ridge Trip

Leader: Tamara Naumann

Sept. 10 Edible/Medicinal Plants

Leader: Tina Jones

Sept. 24 Aquatic Plants Workshop

Leader: Dr. Richard G. Walter

Nov. 5 Penstemon Workshop

Leader: Gwen Kelaidis

Dec. 10 Carex Workshop

Leader: Dr. David Cooper

ANNOUNCEMENTS

CONPS Slide Show

Four sets of the CONPS slide show *A Brief Visit to Colorado Life Zones* are still unsold. The cost is \$44.50 for 80 slides, a tape cassette and a text booklet. If you are interested in purchasing a set or know of someone who would be, please contact Virginia Dionigi, PO Box 97, Hygiene, CO 80533. Telephone: 776-2609.

Workshop Information

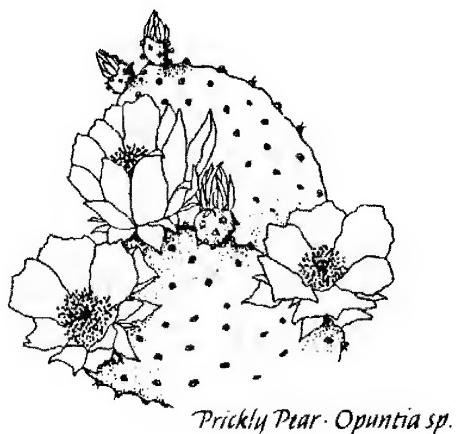
Upcoming workshops are listed on page 3, opposite. General information on workshops is provided on page 10. Contact Bill Jennings for workshop registration or information.

Please share your suggestions for future workshops with us, as well as your comments on workshops you have attended.

This issue also contains summary reports on workshops held early in 1988; see pages 4 and 10.

Winter Workshops

For the winter (1988-1989), we have already received tentative commitments from instructors for workshops on the following topics: Pre-settlement/Post-settlement Vegetation in the Arkansas Valley; Grasses; Alpine Plants; Pollination Ecology. Watch for announcements starting in September.

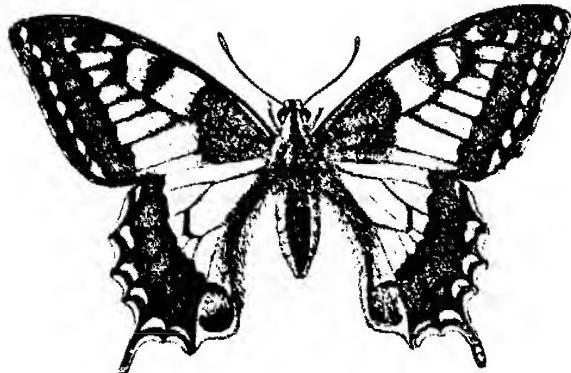


Prickly Pear - Opuntia sp.

Board Meeting Highlights

The Society's Board of Directors met on March 19th at the home of Tina Jones in Denver. The Board discussed the need for liability coverage for CONPS field trips and other activities. The spring meeting in Fort Collins and the rare plant publication were also discussed. Jim Borland reported on a Colorado Environmental Coalition meeting he attended. Tina Jones will be taking on the activities of the long dormant Publicity Committee. An annual meeting of the Society is being planned for October in Boulder.

Board meetings are open to the public and all members are invited to attend. The next meeting will be at the home of Myrna Steinkamp, 4700 Venturi Lane, Fort Collins, following the spring meeting on May 14th.



Roxborough Park Butterfly Seminar

If you've ever wondered about our most beautiful insects, the butterflies, come to Roxborough State Park's "Butterfly Watching for Beginners". Participants will learn to watch, photograph, net and handle butterflies with no damage to the subjects. Emphasis will be on butterfly behavior, ecology and biogeography.

In two sessions, Tuesday June 28th (7 to 9:30 p.m.) and Wednesday June 29th (9 a.m. to noon), noted author and lecturing consultant Dr. Robert Michael Pyle will offer insight into our local lepidoptera population. Seminar cost is \$40 which includes instruction and a morning snack; the remainder goes to further educational activities at Roxborough State Park. For more information call 973-3959. Pre-registration is required.

Be a Volunteer Naturalist

Roxborough State Park will be starting training for volunteer naturalists during the second week of July. Naturalists guide visitors and interpret the Park's features. You may find this a rewarding and educational activity. Persons with knowledge of plants and other nature subjects are especially needed. If you are interested, call the Park at (303)973-3959.

Fall Workshops for 1988

Edible and Medicinal Plants

Saturday, September 10

Leader: Tina Jones

Participants will enhance their knowledge of Colorado's edible and medicinal plants in this half-day workshop. Wild and native plants, in addition to naturalized plants brought to the U.S. from other countries, will be discussed. Topics will include edible plant parts such as leaf, root, stem, flower and fruit structures; North American Indian uses and folk medicine in conjunction with therapeutic actions; and wild plant recipes and teas. Registrants will cook, prepare and eat previously collected plants and have an opportunity to see slides and plant specimens. Location to be announced.



Aquatic Plants

September 24

Saturday, September 24

Dr. Richard G. Walter

We have had workshops on plants of barren lands and on wetlands, now we go even further with aquatic plants. The identification and taxonomy of plants that float or are submerged during part or all of their life cycle will be covered in this unique workshop. In addition to pressed herbarium specimens, Dr. Walter will have fresh aquatic plants to study. To be held at Colorado State University, Fort Collins.

Penstemons

November 5

Saturday, November 5

Gwen Kelaidis

The intermountain region is a major center for *Penstemon* species. Though beautiful and often highly prized for horticultural purposes, the many species of Penstemons represented make identification difficult. The primary purpose of this workshop is to enable the botanist to identify the different sections within genus *Penstemon*. Once the characteristics differentiating the sections are understood, keying from there to species is usually straightforward. To be held at the Foothills Nature Center, Boulder.

Carex

December 10

Saturday, December 10

Dr. David Cooper

The grasslike monocots (grasses, rushes and sedges) are usually avoided by wildflower lovers because identification is thought to be difficult or because the floral parts are not photogenic. In this workshop, you will have the opportunity to get over your fear of one important genus, *Carex*. We will learn the characteristic features of sedges, key a number of species, and become familiar with the major regional species. To be held at the Colorado School of Mines in Golden.

Illustration by Barbara Bash, used by permission of Cloud Ridge Naturalists.

Workshop Summary Reports

Rare Plants in Wyoming?

Hollis Marriott, botanist for The Nature Conservancy in Wyoming, led this highly interesting and informative workshop on January 30th at the Foothills Nature Center in Boulder.

Hollis' presentation concentrated on a number of rare Wyoming endemics. Although there may be many individual plants of these species in a certain locale, the species are not widely distributed. Hollis used the term 'sensitive species' to describe these plants since the term 'rare' can be confusing (especially to the non-botanists whose cooperation is often needed to protect them). In the areas where these plants occur they may be quite common, but they are sensitive to management practices and could become seriously threatened because of their limited ranges.

The 30 species of narrow endemics in Wyoming constitute about 1% of the flora of Wyoming. They often occur in harsh, scarcely vegetated areas such as exposed ridge tops or outcrops and often have matted, caespitose forms.

We focused on 12 species occurring in or near Colorado. Hollis generously furnished us with information, site locations and maps for each plant discussed, and provided specimens for examination. Among the plants discussed were *Trifolium barnebeyi*, which has a total known range of nine air miles in Red Canyon near Lander, *Sphaeromeria simplex*, known from one site, a privately owned cement quarry, and the yellow spring beauty, *Claytonia lanceolata* var. *flava*, which occurs in several sites along with the white variety. Four species known from Colorado (*Penstemon acaulis*, *Penstemon gibbensii*, *Gaura neomexicana* var. *coloradensis*, and *Aquilegia laramiensis*) were also discussed.

The second part of the presentation dealt with management practices used to protect rare plants. The Nature Conservancy, which formerly relied on land acquisitions as its sole method of protection, has more recently expanded its management options to include a greater variety of practices including greater emphasis on public education and cooperative management with private land owners, and long-term monitoring of plant populations on private lands. The Natural Heritage Inventory Program begun in 1974 has become an important tool in management planning for the protection of rare, endangered and sensitive species.

Hollis' timely presentation and lovely slides of beautiful and infrequently visited areas left many of us eager to plan our next trips to Wyoming to make our own rare plant searches.

Summary by Kathy Carsey

Northern Colorado Deciduous Trees

Dr. Gilbert Fechner, professor of forest genetics at Colorado State University, conducted this workshop on the CSU campus, February 20th. The workshop focused on native species in the genera *Acer*, *Alnus*, *Betula*, *Celtis*, *Crataegus*, *Populus*, *Prunus* and *Quercus*.

We began with a review of the vegetative and floral morphology of angiosperms. The discussion emphasized vegetative shoot features that can be useful in field identification. These include leaves and leaf scars, stipules and stipule scars, lenticels, surface hairs and waxes, pith shape and composition, and buds. Shoot symmetry and bud and pith characteristics are particularly helpful in identification.

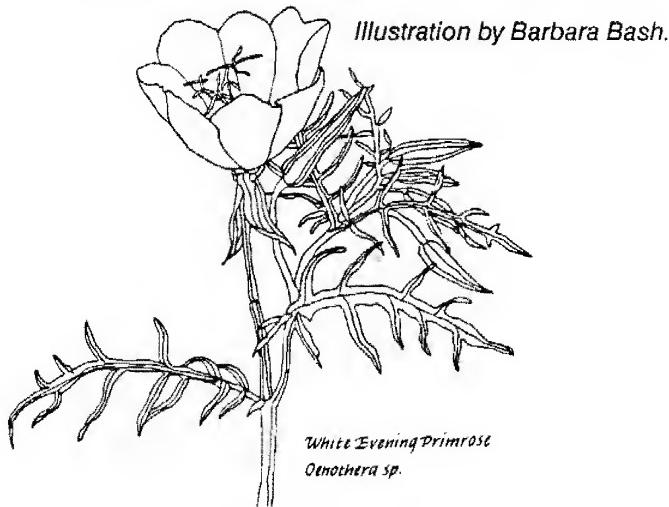
Dr. Fechner provided very detailed identification summaries, including notes on the ecology and distribution in Colorado, for each genus discussed during the workshop. Those interested in pursuing this topic independently are referred to the following texts:

Harlow, William M., et al. *Textbook of Dendrology*, 6th edition. McGraw-Hill, New York.

McKean, William T., ed. *Winter Guide to Central Rocky Mountain Shrubs (with Summer Key)*, 2nd edition. State of Colorado, Department of Natural Resources, Division of Wildlife, Denver. (\$3.50)

Summary by Marguerite Flanagan

Workshop reports continued on page 10 . . .



Correction

In our January issue we printed an article on *Utricularia* by Dr. Weber without crediting him. We appreciate his contributions and apologize for this oversight.

Asperugo, the reluctant weed

Asperugo procumbens is an introduced weedy borage that occurs sporadically in Colorado, never common and often coming and going so that one tends to find it in a place once and perhaps not again. In Sweden, *Asperugo* is called "paddfoten", "toad-foot", because of the way the calyx flattens out in that shape. Evidently in Sweden it behaves somewhat in the same way. An interesting paper on its autecology has been recently published by R. Svensson and M. Wigren in *Svensk Bot. Tidskrift* 81:321-331. Besides being an interesting and enlightening story, it illustrates how there are thousands of topics for amateur botanists to tackle in Colorado botany, that don't require a college degree or a professorial position.

Botanical research should extend to the unsalaried, just as it does in ornithology. I well remember when I was in high school and a budding ornithologist, I attended a meeting of the New York Linnean Society and heard Margaret Morse Nice talk about the song sparrows she had been watching out her kitchen window. Mrs. Morse started the movement of amateur contributions to serious ornithology which flourishes now all over the world. So by way of the *Asperugo* story I would hope to indicate that in some of the smallest areas of plant study fine scientific contributions can be made by amateurs. The following is simply the abstract of this paper. An illustration of the plant can be seen in **Colorado Flora: Western Slope**, Figure 25f.

"*Asperugo procumbens* was formerly a relatively frequent village weed in Sweden. During recent decades it has declined, in Sweden as well as in many other European countries, and it is considered to be threatened or vulnerable. The fruits may preserve their viability in the soil for about three years, in the open air for at least nine years. The germination is very capricious, hardly occurring in soil with low nutrient content or in closed sward."

"The seedlings can only develop in open soil. The flowers develop successively in the top of the branches and are open one at a time. Each flower is open 1-1.5 days and is self-pollinated. The nutlets are heavy and fall to the ground, but may also be epizooically dispersed over long distances since fruits and branches may become attached to animals by stiff hooks. In nature, *Asperugo procumbens* often occurs 2-3 years on the same locality, and then disappears, especially if the habitat is overgrown by grass and other competitive species. It flourishes around dung-heaps and in wood-yards, habitats that are becoming increasingly rare today. In such habitats an average specimen may produce about 270 flowers and 1,000 nutlets."

The authors are professionals at Uppsala University, and the rest of the paper (in Swedish) is appropriately complicated. However, the abstract shows how simple observations made over a period of a few years on one plant

species can yield very interesting and often startling results. Through it I learned, for example, why *Asperugo* is so sporadic and unpredictable in Colorado, where its habitats are infrequent, at least where botanists go. Would we find it common around cattle holding pens? Other questions come to mind. Let's open our eyes and look farther than merely the recognition of the plant and a very rough approximation of its habitat.

Colorado Plant Puzzles

Here are a couple of other puzzles that I have seen in Colorado. The monument plant, *Frasera speciosa*, is very long-lived, and papers have been published about this. It may wait until it is 30 to 60 years old to blossom, and then, like *Agave*, flowers and dies. All this is very exciting, but once I was showing a foreign visitor this plant and did not know this habit of the plant. I assumed that if I dug into the heart of the rosette I would find the buds of the flowering stalk. Instead, in many rosettes I found the head inhabited by a big white grub. No one has ever been able to tell me what this animal is or what it turns into.

Somebody in the CONPS
who likes to play with
butterfly, moth or what-not
larvae might try to find
out and tell me.



Sand lilies, *Leucocrinum montanum*, are very abundant here in early spring. How do they propagate? The floral tube is very long and mostly underground. The ovary is several inches below the surface of the ground. How do the seeds reach the surface of the ground? Are they squeezed out in some way? How are they spread around? A nice little problem. Who will solve it?

Mignonette, *Reseda lutea*, has grown as a weed along the Pierre and Niobrara shale ridges north of Boulder just south of Left Hand Canyon mouth since at least 1917. Why has it never spread any farther? Why does it maintain only a presence, and never overrun the landscape? Will it grow in only that soil? Who'd like to try potting it in different soils and see what happens?

William A. Weber
Professor Emeritus
University of Colorado Museum

CONPS Field Trip Policies

The Society wishes to remind field trip participants of the guidelines for participation in Society trips. By joining a CONPS field trip you indicate acceptance of the policies, printed in full in the April/May issue.

1. Plant collecting is forbidden on CONPS field trips, with two exceptions:

(1) Collecting is permissible for scientific study (with the appropriate collecting permit, if required).

(2) A trip leader or other responsible person may collect plants for immediate instructional use. However, collecting of rare, threatened, endangered or sensitive species should never be done for instructional purposes.

2. Rides and Cost-Sharing Policy: Car-pooling and ride-sharing are encouraged on CONPS trips. All drivers who provide rides to others will graciously accept payment according to the scale listed in the March/April 1988 issue.

3. Pets are not permitted on CONPS field trips.

4. Field trips are designed primarily for adults, unless the trip description specifically states otherwise.

5. CONPS's expressed purpose is to promote appreciation and preservation of our flora. Use it lightly.

Upcoming Field Trips

Details on the field trips listed below were printed in the March/April issue of *Aquilegia*. Call Jeff Dawson at 722-6758 for reservations or additional information.

Uncompahgre Plateau May 28-30

Elizabeth Neese will lead this trip exploring the relationship of endemism and geology in the lower elevation badlands. We expect to see a number of rare and sensitive western Colorado species. We will meet at 9 a.m. on Saturday May 28 at the Visitor Center in Colorado National Monument.

The Roan Cliffs June 18-19

John Anderson leads this field trip to opportunities to see a State Natural Area, a new species and a double waterfall. We will begin at 10 a.m. on Saturday, June 18 at the Rifle Gap State Park campground.

Pikes Peak Mistletoe June 25

Our tour, led by Frank Hawksworth of the Forest Service, will go south on the old Gold Camp Road for a short distance, back to the Springs, then up the Rampart Range road, to Woodland Park and return to the Springs (probably by 3 p.m. or so).

Summer Field Trips

Florissant Wildflower Photography

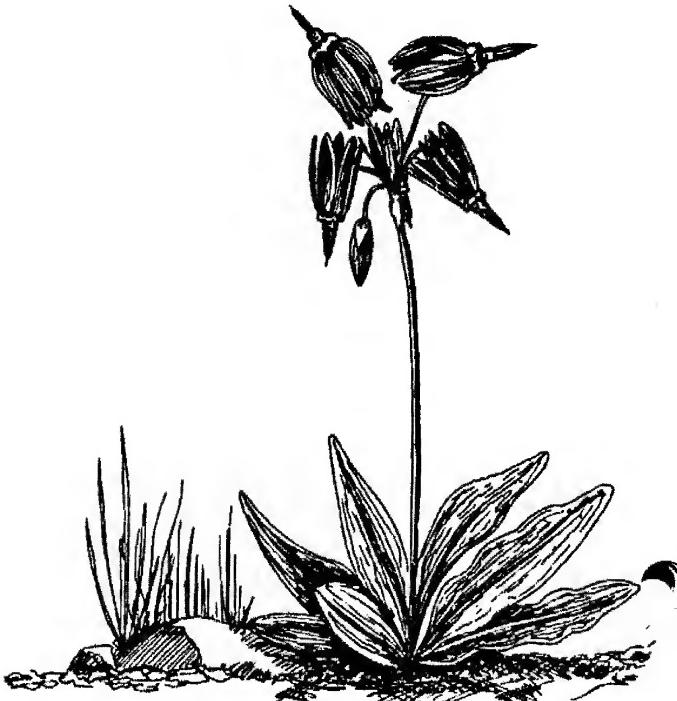
July 16

Leaders: Mary Edwards, Bill Jennings

Bring your camera and help us add to the photographic record of CONPS' herbarium project at Florissant Fossil Beds National Monument. On Saturday July 16th the wildflower display should be spectacular! The Florissant committee does not have a good collection of slides of plants or special habitats, and we particularly need scenic shots such as a bird's-eye view of the Monument from the top of the Eagle's Roost, Monument buildings, and habitats such as the bristle-cone pine stand. We also hope to fill in any gaps the Monument might have in its collection. Keep track of the cost to you of film and processing for slides (or copies) that you wish to donate, and CONPS will reimburse you.

More plant collecting needs to be done as well. Certain species need to be re-collected this year, and on every trip we are still finding a few new species!

Bring lunch, water, rain gear (just in case!), cameras or collecting equipment (or both). We will meet at the Visitors' Center at the Monument 1 mile south of the town of Florissant at 9:15 a.m. Florissant is 35 miles west of Colorado Springs — take U.S. 24 off I-25. Please register with Jeff Dawson (722-6758). There is no limit on participants. Call Mary Edwards (233-8133) if you need more information.



Hoosier Ridge July 23-24

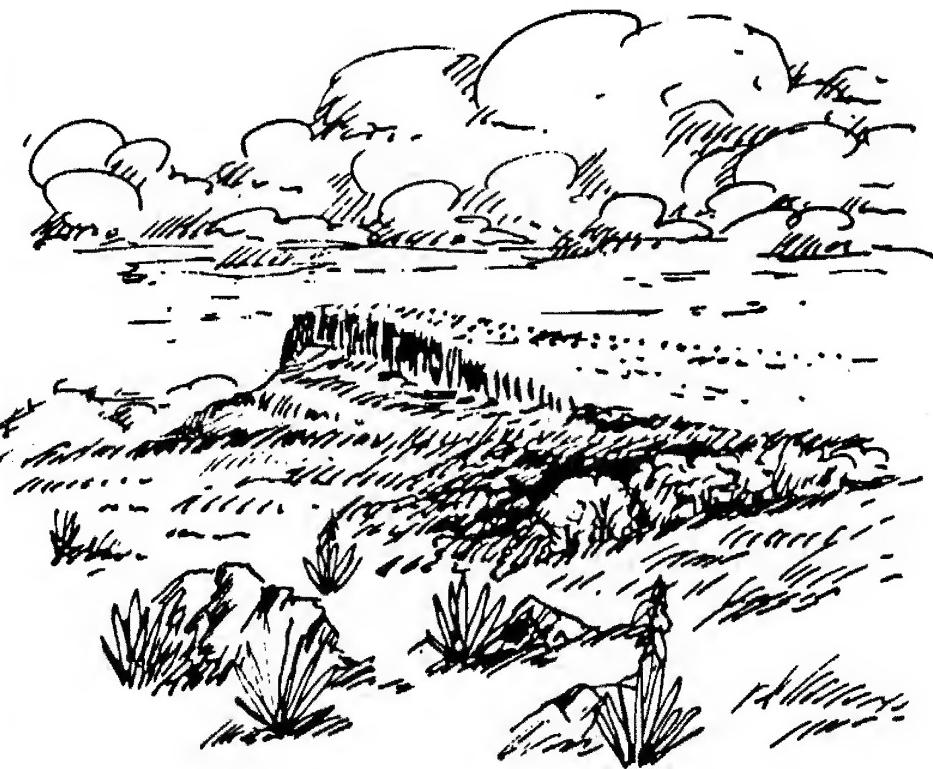
Leader: Tamara Naumann

The focus of this field trip will be a search for *Eutrema penlandii* (a.k.a. *Eutrema edwardsii* ssp. *penlandii*). Searches conducted in 1986 for previously known occurrences were unsuccessful — an indication that the number of populations may be declining. This will be a working field trip, beginning with an orientation in mapping and recording methodology, developing a habitat search-image, and (hopefully) a visit to an extant locality. Trip participants will have an opportunity to participate in an inventory-in-progress after week number 1 of a 3-week field search.

We will meet at the Hoosier Pass rest area at 10 a.m. on Saturday, July 23rd. Hoosier Pass is on Colo. Hwy. 9, between Breckenridge and Fairplay (approx. 10 mi. south of Breckenridge). Precise plans will be made on the spot, based on results of field work conducted the several days prior to the trip. Some hiking in steep terrain is likely. We will very likely split into groups so the hiking distance can be varied to suit individual preference. Expect a range of 1/4 mile to 1 mile (I can arrange longer distances if there is interest).

Be prepared for rain and cold mornings (Hoosier Pass is 11,539 ft.), and bring a lunch in a day-pack. If high-clearance vehicles are required for a portion of the work, we will work out ferry arrangements among ourselves. There are several campgrounds in the area (Kite Lake and Beaver Creek campgrounds on the Pike National Forest), and motels in Breckenridge and Fairplay for non-campers.

Tentative plans are to camp in the Kite Lake campground on Saturday night. We will arrange a meeting place for Sunday morning before quitting time on Saturday. Sunday will be work or a leisurely search for interesting plants, depending on the wishes of the group. The Mosquito Range harbors a number of Pleistocene relict plant species of special interest including *Ipomopsis globularis*, *Braya humilis*, *Braya glabella*, *Saussurea weberi*, *Draba borealis*, *Armeria scabra* ssp. *siberica*, *Ranunculus gelidus*, and *Ptilagrostis porteri*.



We will quit early Sunday afternoon. Bring Weber's Colorado Flora: Western Slope and Rocky Mountain Flora, and a Pike National Forest map if you have one. A compass would be helpful. Reservations are required: 15 person limit. Call Jeff Dawson, 722-6758, evenings.

San Luis Valley RMP

Sue Martin

The Bureau of Land Management (BLM) is drafting a Resource Management Plan (RMP) for the San Luis Valley in south-central Colorado. RMPs are important because they provide the management "rules" for an area for at least the next ten years. Recently, representatives of several organizations met with BLM staffers to discuss sites within the San Luis Resource Area that are important for their botanical, geologic, cultural or wildlife values. This Workgroup provided information to help BLM determine what sites to propose for protection as Areas of Critical Environmental Concern (ACECs). CONPS is particularly supportive of ACECs that would include *Neoparrya lithophila* (Apiaceae), and additional survey and protection for *Cleome multicaulis* (Capparaceae; 'little beeplant') and *Astragalus ripleyi* (Fabaceae).

Some of our members may have special knowledge of the San Luis Valley; if so, the Conservation Committee would appreciate any information on San Luis Valley sites (plant, animal, cultural or scenic) that seem worthy of protection.

Because few BLM sites are known for *Cleome multicaulis*, a wetland species that may be severely affected as a result of water use patterns and trampling by grazing animals, the Conservation Committee hopes to sponsor a weekend "plant hunt" in the San Luis Valley to search for additional populations. Tentative plans are for a July weekend; watch for later information or contact Conservation Chair Sue Martin.



Newsletter Changes

During the past two years much of the improved appearance of this newsletter has been due to the efforts of Elizabeth Otto. She has been very generous in giving her time and talents in word processing, layout and many other tasks necessary in getting *Aquilegia* to you. Elizabeth has relinquished some of her involvement with newsletter production, but continues to serve on the Board of Directors. We are very grateful to her for her contributions.

As of the March/April issue, Sally White has joined the Editorial Committee to take over several tasks which Elizabeth had been doing. We are confident that she will continue the high standards of quality which you have come to expect in your newsletter.

We are always looking for interesting plant notes and artistic contributions. Please keep your submissions as concise and informative as possible to allow a diversity of articles.

As many newsletter contributions are apparently being prepared on word processors, please note that we welcome materials submitted on diskette, especially for longer articles. IBM-compatible format is required; 5 1/4 inch DS/DD diskettes using Wordstar™ are preferred. We can also handle text prepared with Word Perfect, MS Word, and many other programs. Keep word processor formatting to a minimum (e.g. no justification, no hyphens, etc.) If you would like to submit diskettes to save retyping, please contact Sally at 697-5439 evenings for details. Label diskettes with your name and address; they will be returned for your next contribution.



Spring at Red Rocks Park

Peter Root

Most of us think of this park as a place for noisy concerts and rock climbing accidents involving intoxicated park visitors. In spite of these activities, Red Rocks is still a good, accessible place to see early spring wildflowers and other interesting plants. The massive outcrops of the Fountain formation which give the park its name also provide a mosaic of microhabitats which support a very diverse flora.

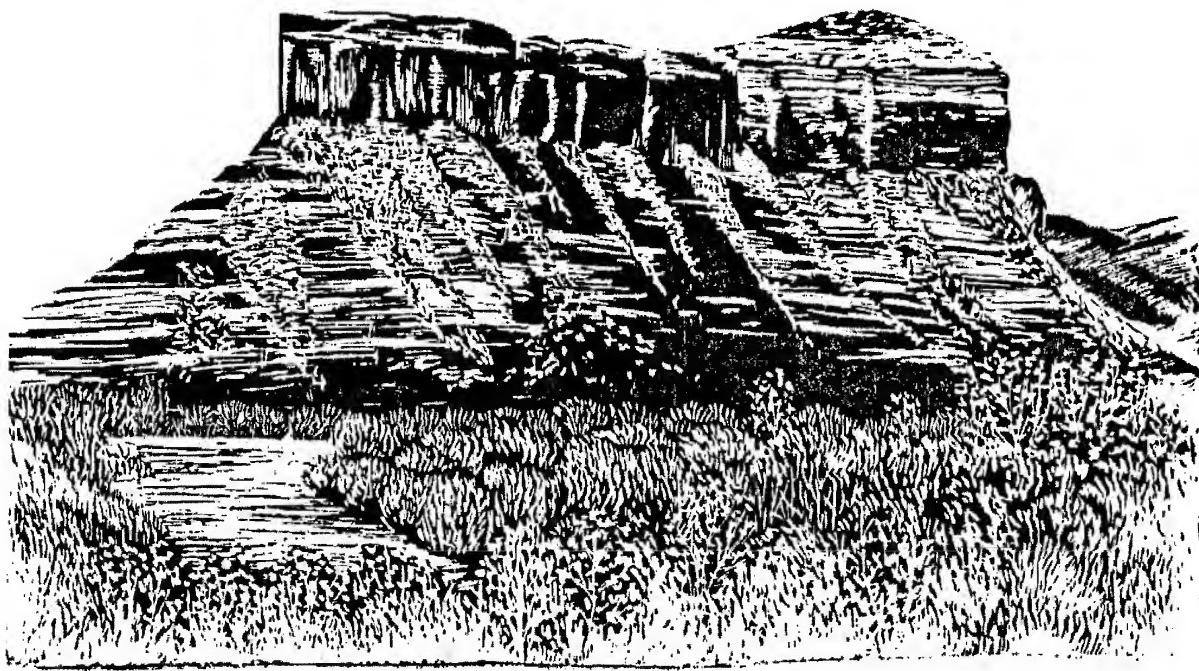
The best place to observe plants is near the small parking area at the north end of the park. Above the parking area there is a large Douglas-fir which apparently benefits from water draining off a large sandstone outcrop above it. Near it is a Rocky Mountain maple which is also growing well.

In the early spring, Oregon grape holly and spring beauties are quite visible on the rocky slopes here. If you follow the eroded trail up among the rocks you will see a small group

of aspens along the north-facing base of a rock formation. These are among the lowest elevation naturally occurring aspens in the state. A few scrub oaks on this slope are also a surprise. Is this the northern limit of their range?

Heading down the slope toward a small creek we can find sagebrush buttercups and Easter daisies among the mountain mahogany shrubs. At the base of the slope the fragile fern grows around some of the rocks. A few mountain ball cactus still grow near here. The snowball saxifrage and pasque flower can be found after some searching.

This area can be easily visited from the Denver area and you do not have to be a seasoned hiker to enjoy it. It is hoped that future management of the park will try to preserve its remaining natural values.



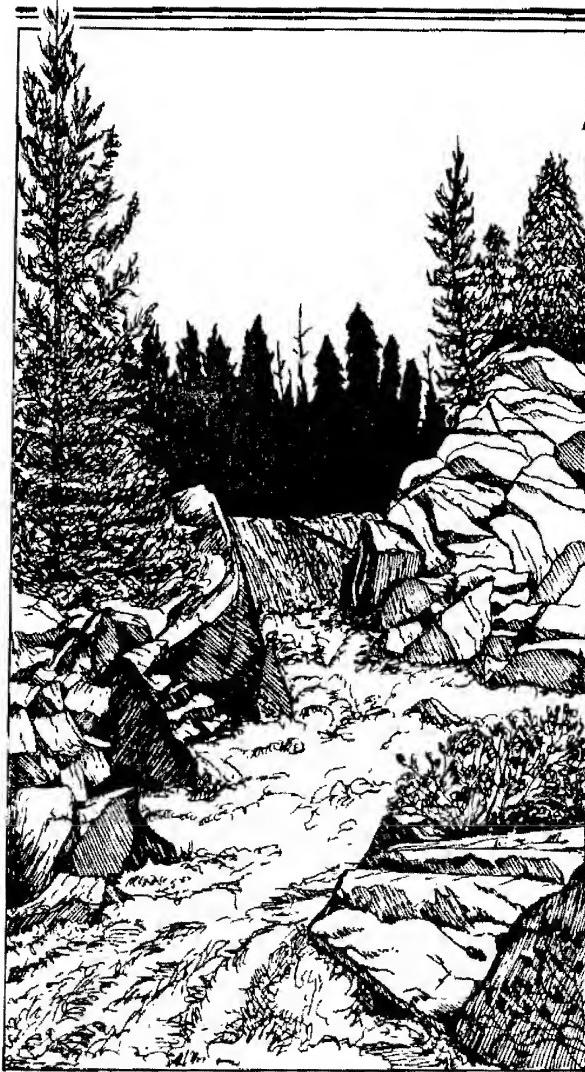
About CONPS Workshops

Enrollment in workshops is always limited, usually due to room constraints, so you must register in advance. Contact CONPS workshop coordinator for registration and workshop information: **Bill Jennings, 360 Martin Dr., Boulder, 80303, 494-5159.** Be sure to include your mailing address and phone number if you mail in your registration. Registrants will be notified by mail about two weeks prior to the workshop regarding final location, time, lunch, suggested references, etc. Please register promptly, as workshops tend to fill up fast. However, cancellations sometimes create openings, so you might want to check with Bill up to the night before the workshop if you want to try to register at the last minute.

The fee for each workshop is \$8 for members and \$16 for non-members. If you plan to attend more than one workshop per year as a non-member, it is cheaper to join CONPS as an individual member (\$8 per year) and come to workshops as a member. Please hold payments until the day of the workshop.

NOTE: The fee for the "Edible and Medicinal Plants" workshop (see p. 3) will be \$5 members and \$10 non-members.

It takes considerable time and effort for the instructors to plan and develop workshops and field trips. Please let us know how you like the workshops and field trips offered by CONPS. We need your suggestions for other workshops and trips, as well as your feedback on whether you found them informative and exciting or dull and uninteresting. We need to know whether we are serving you, our members, the way you wish.



Cryptantha Workshop Summary

Dr. Walt Kelley of Mesa College, Grand Junction, recently shared his knowledge of *Cryptantha* with an interested group of CONPS members. The April 2nd session was devoted to Section Oreocarya, the perennial *Cryptantha* species (genus *Oreocarya* in Weber's *Colorado Flora: Western Slope*). The group learned some important field characteristics to note about a *Cryptantha* population of interest, such as the size and appearance of typical and of "oldest-looking" plants, substrate type, corolla tube length in comparison with calyx length, and petal shape. Prof. Kelley also presented detailed information on each Colorado taxon, complete with excellent slides.

Then we quickly got down to the "nutty-gritty" of the subject: nutlet morphology, and the sometimes arcane terminology used to describe nutlet characteristics. The genus *Cryptantha*, like others in the family Boraginaceae, is (as we mostly remembered) characterized by fruits comprised of four distinct nutlets. We were provided excellent specimens, numbered but unlabeled as to species, and got to practice dissecting fruits, examining nutlet characteris-

tics, and using the various keys covering the perennial Colorado *Cryptantha* (including an unpublished one by Dr. Kelley). Our identification could then be checked against the correct name on a coded list.

Mumbles of "... would you say this nutlet is muricate, or tuberculate-rugose ??", or "...look, this one has an open/triangular scar!!" or "Don't you agree those leaves are conspicuously pusticulate...?" filled the room as we worked individually or in small groups. Everyone had an opportunity to study each specimen, making it possible to gain an understanding of the range of calyx/corolla, leaf pubescence and nutlet characters used in the keys.

Participants went away knowing we couldn't recognize each *Cryptantha* on sight, but much better equipped to key them. Thanks to Walt Kelley for such an informative workshop. On with the search for the elusive *Cryptantha aperta* !

Summary by Sue Martin

An Early Trip to Mt. Goliath

Peter Root

Mt. Goliath, a small park in the Mt. Evans complex, is well known as a place to observe alpine plants in the summer. A nature trail there is much used by visitors driving on the Mt. Evans highway. In the fall after the highway is closed, many of us would think this area becomes inaccessible until very late spring.

Recently I tried to walk from Echo Lake to Mt. Goliath and was surprised to find that the road has been kept plowed enough to be walked on. Quite a few people had evidently walked and skied on it. The only difficult spots were found where snow had drifted over the road. Fortunately, it was possible to go around them. The road was completely blocked near Mt. Goliath, but it was possible to climb a short distance and reach the tundra.

The wind keeps the tundra slopes nearly clear of snow and many of the alpine plants were recognizable in their dormant state. A large flock of rosy finches were feeding along the road, but the biggest surprise for me was to see a flicker! This woodpecker which we see often in the suburbs and foothills was searching for food in the stumps of large bristlecone pines which once grew here. The tracks of ptarmigans and snowshoe hares were the only other signs of animal life.

Visiting the subalpine and tundra zones in the winter gives us a better appreciation of the conditions to which plants have adapted in order to live there. If you know of other interesting, accessible areas, please share them with us in *Aquilegia*.



Old Man of the Mountains
Rydbergia grandiflora

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Please direct all membership applications, renewals and address changes to the MEMBERSHIP chairperson, in care of the Society's mailing address.

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